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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/552,217	04/19/2000	Thomas Eugene Hubina	81226-249452	3364

27496 7590 05/21/2004

PILLSBURY WINTHROP LLP
725 S. FIGUEROA STREET
SUITE 2800
LOS ANGELES, CA 90017

EXAMINER	
JERABEK, KELLY L	

ART UNIT	PAPER NUMBER
2612	

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/552,217	HUBINA ET AL.	
	Examiner	Art Unit	
	Kelly L. Jerabek	2612	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) *1,11,12,15,16,19,20,23 and 24* is/are withdrawn from consideration.

5)☐ Claim(s) *2-10,13,14,17,18,21,22,25 and 26* is/are allowed.

6)☒ Claim(s) *27-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 2/24/2004 with respect to claims 27-38 have been fully considered but they are not persuasive.

Response to Remarks:

Applicant contends (Amendment, pages 25-28) regarding claims 27, 30, 33, and 36 that Saito in view of Hattori fails to teach the group of features recited in claims 27, 30, 33, and 36. Specifically, the applicant contends that Saito does not show or suggest "for each of the pixels in the associated group of pixels, determining an associated whiteness weight based upon a dispersion among the intensities of photoexposure at pixels in the group associated with distinct ones of the color channels". The Examiner respectfully disagrees. Saito states that the ratios IR/IG and IB/IG are detected from the values of each of the element color signals R, G, and B of the photograph signal S (Saito: col. 7, lines 61-65). The CCD (3) includes pixels of red, green, and blue color and the photograph signal (S) is output from the CCD (3) (Saito: col. 7, lines 1-9). The Examiner is reading the entire array of pixels of the CCD (3) as the associated group of pixels that includes at least one pixel associated with each of the plurality of color channels. Therefore, since the values IR/IG and IB/IG are detected from the values of

each of the color signals of the photograph signal (S), the ratios IR/IG and IB/IG are generated for each of the pixels of the associated group of pixels in the CCD (3). Furthermore, the ratios IR/IG and IB/IG can be read as whiteness weights because only the values of the ratios of which the divided areas are judged to be substantially white are input to the average adding portion (35) (Saito: col. 8, lines 1-18).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 27, 29-30, 32-33, 35-36, and 38 rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al. US 6,181,374 in view of Hattori US 5,398,058.

Re claim 27, Saito discloses a method for determining groups of associated pixels in the image, each of the groups having three different colors (R, G, and B) (col. 8, lines 7-18). Saito states that the ratios IR/IG and IB/IG are detected from the values of each of the element color signals R, G, and B of the photograph signal S (Saito: col. 7, lines 61-65). The CCD (3) includes pixels of red, green, and blue color and the

photograph signal (S) is output from the CCD (3) (Saito: col. 7, lines 1-9). The Examiner is reading the entire array of pixels of the CCD (3) as the associated group of pixels that includes at least one pixel associated with each of the plurality of color channels. Therefore, since the values IR/IG and IB/IG are detected from the values of each of the color signals of the photograph signal (S), the ratios IR/IG and IB/IG are generated for each of the pixels of the associated group of pixels in the CCD (3). Furthermore, the ratios IR/IG and IB/IG can be read as whiteness weights because only the values of the ratios of which the divided areas are judged to be substantially white are input to the average adding portion (35) (Saito: col. 8, lines 1-18). In addition, Saito states gain coefficients that are applied to the intensities of pixels of a particular color (col. 7, lines 10-26; col. 20, lines 63 – col. 21 line 24). However, although Saito mentions the three different colors (R, G, and B), Saito does not explicitly mention color channels or reference channels.

Hattori also discloses an image pick-up device that can perform white balancing. Hattori shows that color channels can be used to determine gain correction and to differentiate between different spectral regions (col. 3, lines 44-48). Hattori also shows that a reference channel (G) can be chosen from a plurality of color channels (R,G,B) (col. 3, lines 44-47). Color channels and reference channels are advantageous because they can be used to distinguish pixels of different colors or intensity values. For this reason, it would have been obvious to include color channels as taught in Hattori in the automatic white balance control device disclosed by Saito. Doing so

would provide a means for determining groups of associated pixels in the image and determining gain coefficients to be applied to intensities of the pixels.

Re claim 29, see claim 27.

Re claim 30, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 30, see claim 27.

Re claim 32, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 32, see claim 27.

Re claim 33, Saito discloses a signal process circuit (9) and a microcomputer (29) for use in conjunction with an imaging array (3) (see figure 5). For the remaining limitations of claim 33, see claim 27.

Re claim 35, Saito discloses a signal process circuit (9) and a microcomputer (29) for use in conjunction with an imaging array (3) (see figure 5). For the remaining limitations of claim 35 see claim 27.

Re claim 36, Saito discloses a signal process circuit (9) and a microcomputer (29) for use in conjunction with an imaging array (3) (see figure 5). A computer readable medium is necessary in order to operate a microcomputer. For the remaining limitations of claim 36 see claim 27.

Re claim 38, Saito discloses a signal process circuit (9) and a microcomputer (29) for use in conjunction with an imaging array (3) (see figure 5). A computer readable medium is necessary in order to operate a microcomputer. For the remaining limitations of claim 38 see claim 27.

Claims 28, 31, 34, and 37 rejected under 35 U.S.C. 103(a) as being unpatentable over Saito in view of Hattori as applied to claims 27, 30, 33, and 36 above and further in view of Spaulding et al. US 6,243,133.

Re claim 28, Saito in view of Hattori includes all of the limitations of claim 27. However, Saito in view of Hattori does not mention determining an associated whiteness weight using fuzzy logic.

Like Saito and Hattori, Spaulding also discloses an image pick-up device. Spaulding discusses it is common to use fuzzy logic as a weighting method (col. 9, lines 1-7). Using fuzzy logic as a weighting method is advantageous because it is a more

sophisticated and accurate approach. For this reason, it would have been obvious to include fuzzy logic as a weighting method as taught in Spaulding in the automatic white balance control device disclosed by Saito. Doing so would provide a means for accurately and efficiently determining a whiteness weight based upon dispersion of the intensities of different pixels.

Re claim 31, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 31, see claim 28.

Re claim 34, Saito discloses a signal process circuit (9) and a microcomputer (29) for use in conjunction with an imaging array (3) (see figure 5). For the remaining limitations of claim 34 see claim 28.

Re claim 37, Saito discloses a signal process circuit (9) and a microcomputer (29) for use in conjunction with an imaging array (3) (see figure 5). For the remaining limitations of claim 37 see claim 28.

Allowable Subject Matter

Claims 2-10, 13-14, 17-18, 21-22, and 25-26 are allowed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lu et al. (US 5,504,524) discloses a method and apparatus for controlling color balance of a video signal. The information regarding controlling the color balance of color channels.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly L. Jerabek whose telephone number is 703-305-8659. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for submitting all Official communications is 703-872-9306. The fax phone number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the Examiner at 703-746-3059.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KLJ

NGOC-YEN VU
PRIMARY EXAMINER